

Marine Mammal Monitoring and Mitigation Plan

Quintillion Subsea Cable-Laying Operation 2016

INTRODUCTION

Quintillion Subsea Operations LLC's proposed marine mammal monitoring and mitigation plan for the proposed Quintillion Subsea cable-laying program is described below. Quintillion understands that this monitoring and mitigation plan will be subject to review by NMFS, the North Slope Borough, the Alaska Eskimo Whaling Commission, the Alaska Beluga Committee, the Ice Seal Committee, and others, and that refinements may be required. The primary concern is Level B harassment noise emanating from thrusters used by the cable-laying vessel (*C/S Ile de Brehat*) during continuous dynamic positioning. There are no Level A harassment or injury concerns as thruster noise is less than 180 dB at source. Quintillion will employ NMFS-approved Protected Species Observers (PSOs) to monitor the harassment zones and implement mitigation measures as needed.

Harassment Monitoring Radii

Qualified PSOs will establish and monitor a marine mammal harassment zone surrounding the active cable-laying vessel where the received levels would be 120 dB or greater. The initial monitoring zone will extend out 2.3 km based on previous sound source measurements of a similar ship operating thrusters in the Chukchi Sea (Hartin et al. 2011).

Sound Source Verification

Sound source verification (SSV) testing of the proposed cable-laying vessel has not been conducted. Hartin et al. (2011) physically measured dynamic positioning noise from the 104-m (341-ft) *Fugro Synergy* operating in the Chukchi Sea while it was using thrusters (2,500 kW) more powerful than those used on the *C/S Ile de Brehat* (1,500 kW). Measured dominant frequencies were 110 to 140 Hz, and the measured (90th percentile) radius to the 120-dB isopleth was 2.3 km (1.4 mi). Because the *Fugro Synergy* thrusters were more powerful it is expected that the 2.3-km monitoring zone proposed for this project is conservative. Quintillion does not plan to conduct an SSV while operating in Alaska.

Visual Vessel-Based Monitoring

The vessel-based monitoring will be designed to cover the requirements of the Incidental Harassment Authorization for this project. The objectives of the vessel-based monitoring will be to:

- ensure that disturbance to marine mammals is minimized and all permit stipulations are followed;
- document the effects of the proposed cable-laying activities on marine mammals; and
- collect data on the occurrence and distribution of marine mammals in the proposed project area.

The monitoring and mitigation plan will be implemented by a team of experienced PSOs, including both biologists and Inupiat communicators. PSOs will be stationed aboard the cable-laying vessel to monitor and implement mitigation measures during all daytime cable-laying operations. A lead PSO will be designated to oversee the monitoring and mitigation program. With NMFS consultation, PSOs will be hired by Quintillion. PSOs will follow a schedule so observers will monitor marine mammals during all (daylight) cable-laying activities. PSOs will normally be on duty in shifts no longer than 4 hours and no more than a total of 12 hours per day.

It is important to note that thrusters cannot be shut down or powered down during cable-laying operations, nor can the course of the cable-laying vessel be altered. Cable-laying is a tethered operation and any loss of position can result in dangerous risk to cable, equipment, vessel, and personnel onboard. Also, ramping up does not apply to thrusters.

The source and support vessels are suitable platforms for marine mammal observations. When stationed on the flying bridge, the observer will have an unobstructed view around the entire vessel. If surveying from the bridge, the observer's eye level will be about 28 meters (90 feet) above the waterline. During operations, the PSO(s) will scan the area around the vessel systematically with standard reticle binoculars or long-range big-eye binoculars. Laser range finders (Leica LRF 1200 laser rangefinder or equivalent) will be available to assist with distance estimation. Range finders will be used for training observers to estimate distances visually, but are generally not useful in measuring distances to animals directly.

All observations and notable vessel activity will be recorded in a standardized format. Data will be entered into a custom database using a notebook computer. The accuracy of the data entry will be verified daily by the lead PSOs by a manual checking of the database. These procedures will allow initial summaries of data to be prepared during and shortly after the field program, and will facilitate transfer of the data to statistical, graphical, or other programs for further processing and archiving.

The vessel-based observation will provide:

- the basis for real-time mitigation, if necessary, as required by the IHA;
- information needed to estimate the number of “Level B takes” of marine mammals by harassment, which must be reported to NMFS;
- data on the occurrence, distribution, and activities of marine mammals in the areas where the cable-laying operations are conducted;
- information to compare the distances, distributions, behavior, and movements of marine mammals relative to the source vessels at times with and without cable-laying activity;
- a communication channel to coastal communities including Inupiat whalers; and
- employment opportunities for local residents and development/experience for Inupiat Communicators and PSOs.

Mitigation Measures

The primary mitigation measure include conducting most of the cable-laying activity in offshore waters away from nearshore marine mammal concentration areas (e.g., beluga breeding lagoons and spotted seal

haulout sites). Also, PSOs will conduct a marine mammal monitoring program to document marine mammal interactions with the cable-laying operations.

Protected Species Observers

Vessel-based monitoring for marine mammals will be done by trained PSOs throughout the period of cable-laying operations to comply with expected provisions in the IHA. The observers will monitor the occurrence and behavior of marine mammals near the cable-laying vessel during all daylight periods. PSO duties will include watching for and identifying marine mammals; recording their numbers, distances, and reactions to the cable-laying operations; and documenting exposures of animals to sound levels that may constitute harassment as defined by NMFS.

PSO teams will consist of Inupiat observers and experienced field biologists. An experienced field crew leader and an Inupiat observer will be onboard each source vessel during the cable-laying acquisition program. Inupiat PSOs will also function as Native language communicators with hunters and whaling crews and with the Communications and Call Centers (Com Centers) in Native villages along the Beaufort Sea coast (if the Com Centers actually operate in 2016).

A sufficient number of PSOs will be required onboard each cable-laying vessel to meet the following criteria:

- 100 percent monitoring coverage during all periods of cable-laying operations in daylight;
- maximum of 4 consecutive hours on watch per PSO; and
- maximum of ~12 hours of watch time per day per PSO.

PSO Role and Responsibilities

When onboard the cable-laying and support vessels, there are three major parts to the PSO position:

- observe and record sensitive wildlife species; and
- follow monitoring and data collection procedures.

The main roles of the PSO and the monitoring program are to ensure compliance with regulations set in place by NMFS and other agencies to ensure that disturbance of marine mammals is minimized, and potential effects on marine mammals are documented. The PSOs will implement the monitoring and mitigation measures specified in the NMFS issued IHA and in this 4MP. The primary purposes of the PSOs on board of the vessels are:

- Monitoring: Observe for marine mammals and determine numbers of marine mammals exposed to vessel noise and their reactions (where applicable) and document those as required.

The PSOs will observe for marine mammals, stationed at the best available vantage point on the source and support vessels. Ideally this vantage point is an elevated stable platform such as the bridge or flying bridge from which the PSO has an unobstructed 360 degree view of the water. The observer(s) will scan systematically with the unaided eye and 7x50 reticle binoculars.

The following information about marine mammal sightings will be carefully and accurately recorded:

- species, group size, age/size/sex categories (if determinable);

- physical description of features that were observed or determined not to be present in the case of unknown or unidentified animals;
- behavior when first sighted and after initial sighting, heading (if consistent);
- bearing and distance from observer, apparent reaction to activities (*e.g.*, none, avoidance, approach, paralleling, etc.), closest point of approach, and behavioral pace; and
- time, location, speed, and activity of the source vessels; sea state, ice cover, visibility, and sun glare; and positions of other vessel(s) in the vicinity.

Measures to Reduce Impacts to Subsistence Users

Cable-laying activities will follow mitigation procedures to minimize effects on the behavior of marine mammals and; therefore, opportunities for subsistence harvest by Alaska Native communities. These include:

- Operating mostly in offshore waters well away from nearshore subsistence harvest areas;
- Inupiat Communicators and Inupiat PSOs will record marine mammal observations along with marine mammal biologists during the monitoring program to ensure community involvement in the monitoring program; and
- participate with other operators in the Communications Call Centers (Com-Center) Program. It is expected, but not confirmed, that the Com-Centers will be operated 24 hours/day during the 2016 subsistence bowhead whale hunt. Quintillion proposes to routinely call the communications center according to the established protocol while in the Beaufort Sea.

Reporting

Weekly Reports

Weekly reports will be prepared by the PSOs, reviewed by Quintillion, and submitted to NMFS no later than the close of business (Alaska Time) each Thursday during the weeks cable-laying activities take place. The field reports will summarize species detected, in-water activity occurring at the time of the sighting, behavioral reactions to in-water activities, and the number of marine mammals exposed to harassment level noise.

Monthly Reports

Monthly reports will be prepared by the PSOs, reviewed by Quintillion, and submitted to NMFS for all months during which cable-laying will take place. The monthly report will contain and summarize the following information:

Dates, times, locations, heading, speed, weather, sea conditions (including Beaufort Sea state and wind force), and associated activities during the cable-laying program and marine mammal sightings.

- Species, number, location, distance from the vessel, and behavior of any sighted marine mammals, as well as associated cable-laying activity, observed throughout all monitoring activities.

- An estimate of the number (by species) of cetaceans and pinnipeds that have been exposed to the thruster noise (based on visual observation) at received levels greater than or equal to 120 dB re 1 μ Pa (rms) with a discussion of any specific behaviors those individuals exhibited.
- A description of the implementation and effectiveness of the: (i) terms and conditions of the Biological Opinion's Incidental Take Statement; and (ii) mitigation measures of the IHA. For the Biological Opinion, the report shall confirm the implementation of each Term and Condition, as well as any conservation recommendations, and describe their effectiveness, for minimizing the adverse effects of the action on ESA-listed marine mammals.

90-Day Technical Report

A report will be submitted to NMFS within 90 days after the end of the project or at least 60 days before the request for another Incidental Take Authorization for the next open water season to enable NMFS to incorporate observation data into the next Authorization. The report will summarize all activities and monitoring results (*i.e.*, vessel-based visual monitoring) conducted during cable-laying activities. The Technical Report will include the following:

Summaries of monitoring effort (*e.g.*, total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals).

- Analyses of the effects of various factors influencing detectability of marine mammals (*e.g.*, sea state, number of observers, and fog/glare).
- Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover.
- Analyses of the effects of survey operations.

Notification of Injured or Dead Marine Mammals

In the event that the cable-laying program discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), the Applicant would report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators, within 24 hours of the discovery. The Applicant would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. The report would include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved;
- Vessel's speed during and leading up to the incident;
- Description of the incident;
- Status of all sound source use in the 24 hours preceding the incident;

- Water depth;
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).